

REMARKS

This amendment is being filed in connection with a Request for Continued Examination of the instant application. A three month extension of time to respond is also enclosed. The comments of the Examiner in his final rejection of the claims remaining after the amendment filed on June 3 and July 20, 2005, based on 112 and 103(a) have been given consideration by the Applicant and, in view of those comments, Applicant submits the foregoing amendments as placing the claims in condition for allowance and requests favorable consideration of the amended claims.

The Examiner has objected to the drawings, stating that they fail to show the “geodesic isotenoid elliptical shape derived with reference to the angle of the fibers” recited in claim 8 & 13 and similarly recited in claim 17 due to what the Examiner perceives to be a contradiction by the inventor in item 6 of his declaration filed June 3, 2005. While Applicant submits that there is no contradiction with respect to item 6 of the inventor’s declaration, claims 8, 13, and 17 have been amended, and as amended the grounds for this objection are submitted as being moot, such that the objection to the drawings should be withdrawn.

Turning now to the rejections under Section 112, first paragraph, claims 17-20 were again rejected due in part to problems with the original drawings. While the Examiner conceded that in the application as originally filed there appears to be a written description of the shaft having open ends, the Examiner states that the solid lines in Fig. 5 as originally filed indicate structure which closes off the opening. To assist the Examiner, red-inked copies of Figs. 1, 2, and 5 of the

original drawings and of the replacement sheets are submitted. Each drawing figure features red-inked numbers 1, 2, and 3 which correspond to lines depicting the opening of the shown end of the shaft of the invention. As such, it is submitted that a careful comparison of the various drawing figures result in the conclusion that the solid lines shown in the replacement drawings and discussed by the Examiner in paragraph 4 of the instant Office Action clearly do not close off the opening of the shaft, and that therefore the rejection of claims 17-20 under Section 112, first paragraph, referenced in enumerated paragraph 4 should be withdrawn.

Claims 8 and 13-20 were again rejected based on Section 112, first paragraph, due to claim language referencing “a geodesic isotenoid elliptical shape derived with reference to the angle of the fibers”, and “fibers wound...in a geodesic isotenoid manner”. Claims 8, 13, and 17 have been amended, and as amended the Examiner’s rationale for the rejection is submitted as being moot. Thus Applicant submits that the rejection of claims 8 and 13-20 referenced in enumerated paragraph 5 of the Office Action should be withdrawn.

Claims 19 & 20 were rejected based on Section 112, second paragraph, as being indefinite supposedly because of the wording “includes elongated fibers”. Applicant first submits that the Examiner is referring to claims 18 & 19, not claims 19 & 20, since only claims 18 & 19 include the wording discussed by the Examiner. Assuming that to be the case, claims 18 and 19 have been amended to clearly state that the fibers are the same as those recited in claim 17. As such, Applicant submits that the rejection of claims 18 and 19 (stated by the Examiner as claims 19 and 20) under Section 112, second paragraph, should be withdrawn.

Turning now to the Section 103(a) rejection of claims 1-7 & 9-12 based on Kreft in view of Williams ('978), the Examiner states that Fig 2a of Kreft shows a shaft for the transmission of torsional loads, the shaft comprising: an elongated inner tube member 5 having opposed open ends; at least one end piece 3; a composite material covering the inner tube member 5 and a convexly curved portion of end piece 3. According to the Examiner, torque is transmitted directly from the inner tube member 5 to the end piece 3 via the clamping ring 2, and indirectly (through composite material) from the inner tube member 5 through the composite material to the end piece 3. Figure 3 is stated as showing a sacrificial layer 6b of fibers oriented 90 degrees relative to the inner tube 5. The Examiner states that the angle of twist at failure of the inner tube member 5 and the composite material are the same because they both comprise the same materials of construction. According to the Examiner, Fig. 2b of Kreft shows all the fibers 6 oriented at a single angle. The Examiner also states that the shaft in Kreft can be limited to speeds below the first natural frequency of the shaft and to operating loads below maximum operating strength.

The Examiner admits that Kreft does not show the end piece 3 as including a knurled exterior where it is connected to the composite material, but argues that it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the shaft of Kreft by including a knurled exterior on the end piece in order to provide a strong interlock that will not easily break between the end piece and the composite material because Williams ('978) teaches including a knurled exterior 18 on an end piece 12 where it is connected to a composite

material 24 in order to provide a strong interlock that will not easily break between the end piece and the composite material.

The rejections of any other claims of Applicant made by the Examiner in earlier Office Actions are no longer being made. In addition to his comments on his rejection of claims 1-7 and 9-12, at pages 5-6 of the Office Action the Examiner states in regard to item 4, that he continues to have problems with the lines shown in Fig. 5 and discussed above by Applicant in the paragraph that spans pages 8-9 of this amendment. Applicant submits that the fact the lines shown in the original drawings are also shown in the replacement drawings adequately resolves the confusion encountered by the Examiner. If the Examiner wants to state how he believes the drawings could better show something concerning structure that is not claimed as a limitation (other than the fact that the shaft is claimed as being open), Applicant would be amenable to considering such advice. However, based on what the Examiner has specifically stated as being the basis for his problems with the drawings, it is again submitted that a thorough comparison of the drawings should satisfy the Examiner that an opening was always shown, not inserted for the first time in the replacement drawings. Finally, on page 6 of the instant Office Action, the Examiner also comments about "geodesic isotenoid shape". Since this language has been deleted from the claims, these comments by the Examiner are rendered moot.

Turning now to the comments of the Examiner in his rejection of claims 1-7 and 9-12 based on Kreft in view of Williams, Applicant's specification states that the elongated inner tube member has opposing open ends as claimed in Applicant's claim 1. Looking carefully at the

specification and drawings of Kreft, tube 5 does not have open ends. Not only is that limitation specifically not recited in Kreft, it is clearly not disclosed as such in the drawings. What Kreft does have that has opposing open ends is wound material 6, as perhaps can best be appreciated from a comparison of Kreft's Figs. 1 and 2a. In column 4, lines 3-10, Kreft discusses his core of aerated plastic 5 with fibers 6 forming the mid-section 1, as can be further appreciated by Kreft's conclusion of his discussion of the winding found in column 4, lines 23-28. The Examiner correctly states that this winding is of the composite material (column 4, lines 14-16 referenced in enumerated paragraph 7 of the instant Office Action). Thus, Kreft does not satisfy the limitation of claim 1 that the inner tube has opposing open ends. Further, there is no motivation or teaching in Kreft to make its inner tube 5 have opposing open ends.

Still with respect to claim 1, it has been amended to better clarify the fact that the composite material is in contact with and covers the entire inner tube member, and is in contact with and covers at least a portion of the end piece. As Kreft readily discloses in its Fig. 1, and as recognized by the Examiner in his discussion of the winding in Kreft, the material is not in contact with and covering the entire inner tube member 5 of Kreft, but only part of it. The endmost sections of the inner tube member 5 of Kreft are not in contact with the composite material. They are in contact with the interior surface of Kreft's end piece 3. Kreft clearly shows that some of the wound material 6 is separated by end piece 3 from and thus not in contact with the curved end of inner tube 5 which is in contact with the dished mating surface of the end piece 3. Thus this limitation is not satisfied by Kreft and would not be obvious since there is no

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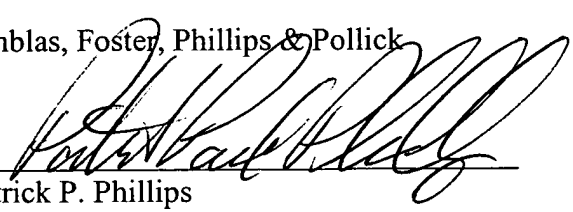
teaching or motivation to have the composite material completely in contact with the entire inner tube. In fact, to do so would necessitate having the composite material covered by the end piece contrary to the plain teaching of Kreft. Thus the winding of Applicant's invention in the manner described by Applicant is not obvious based on Kreft combined with Williams, since it would not result in the claimed invention. Therefore, upon closer examination, the supposed combination would not result in Applicant's device, and is contrary to the teachings of Kreft. In conclusion, Applicant submits that no one of ordinary skill in the art would attempt to make the combination and result in Applicant's device, absent complete redesign or reliance on hindsight, both of which are impermissible according to the Federal Circuit.

In view of the amendments claims, and the foregoing remarks, claims 1-7 and 9-20 are submitted for further consideration as being patentable. The allowance of these claims is respectfully solicited. If the Examiner has any questions which would expedite issuance of a Notice of Allowance, a telephone call to the undersigned is requested during normal working hours. The Commissioner is authorized to charge Deposit Account No. 13-3393 for any insufficient fees under 37 CFR §§ 1.16 or 1.17, or credit any overpayment of fees.

Respectfully submitted,

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By


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May 22, 2006 (Monday)

Enclosures - Petition for 3 month extension of time;
Request for Continued Examination;
Fee transmittal form and check

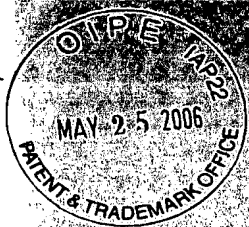
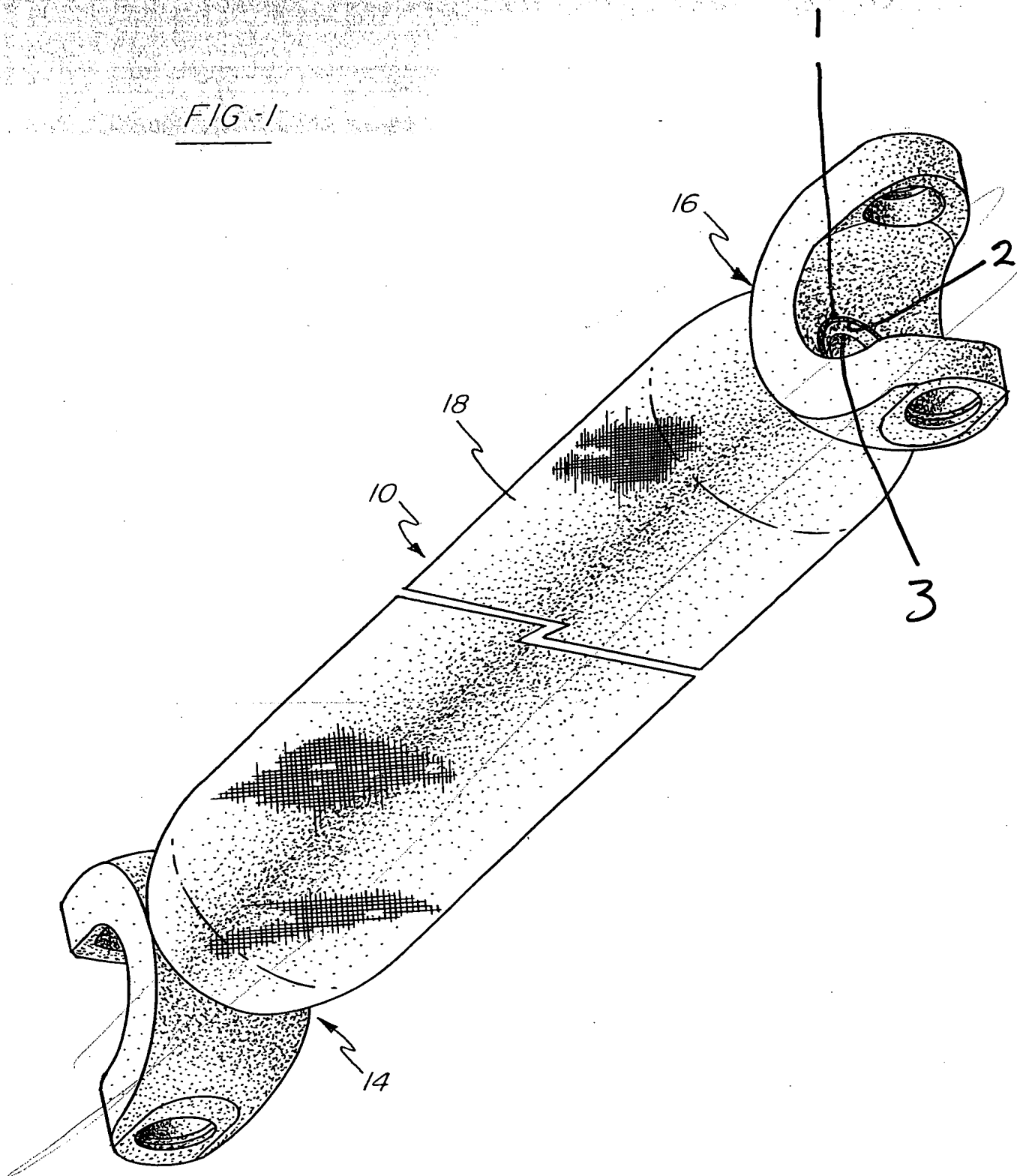
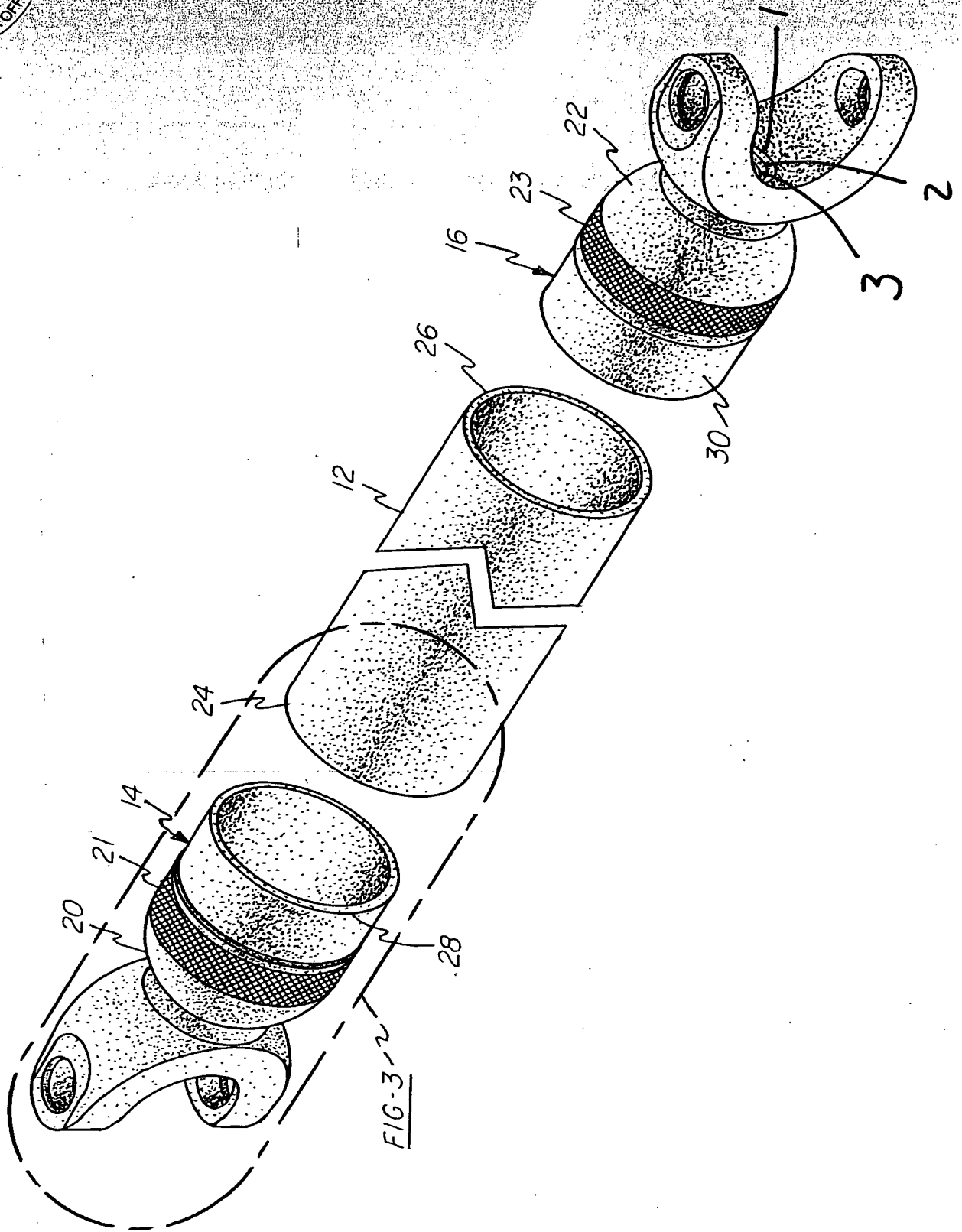
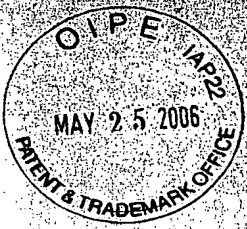


FIG -1



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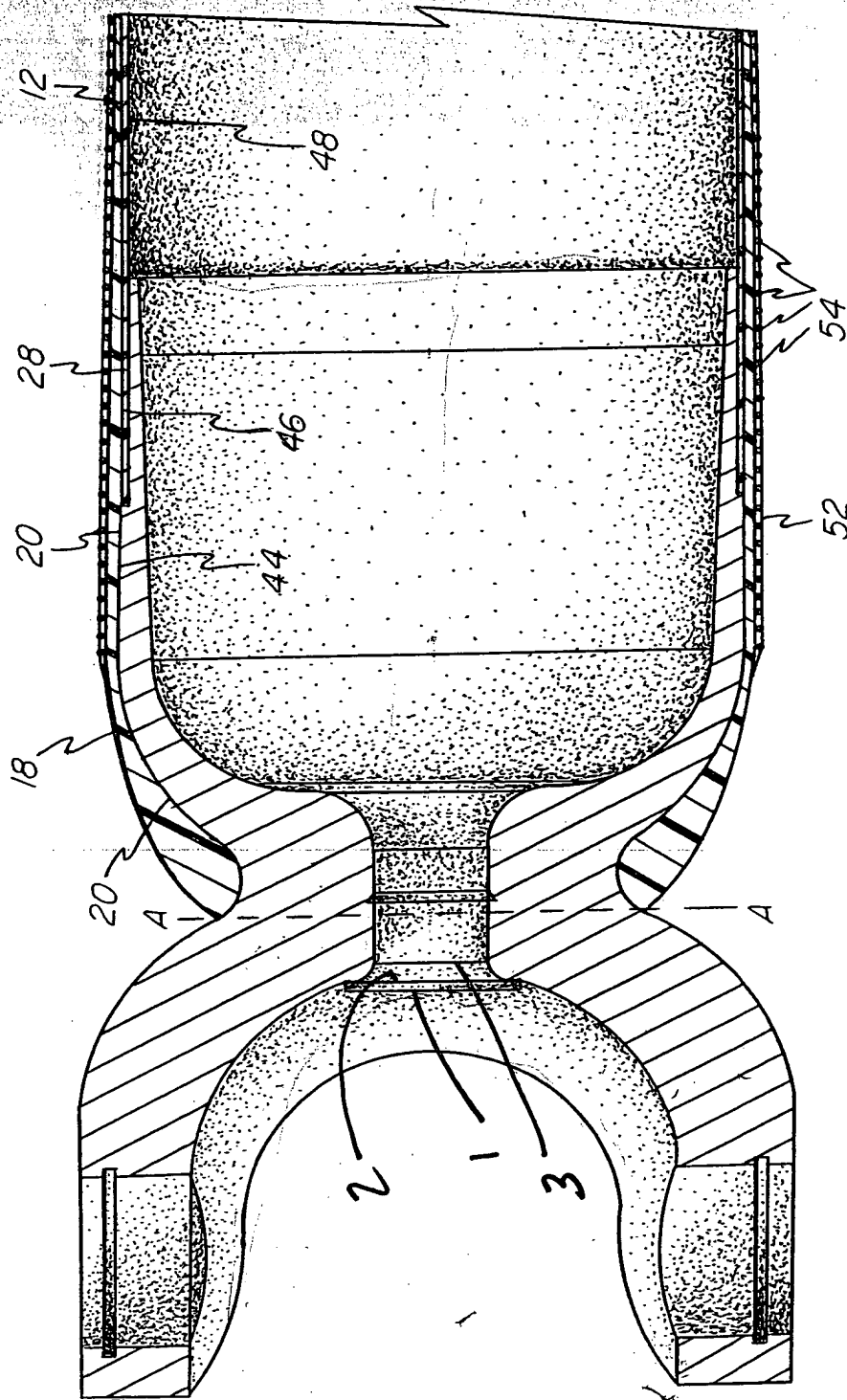


FIG-5